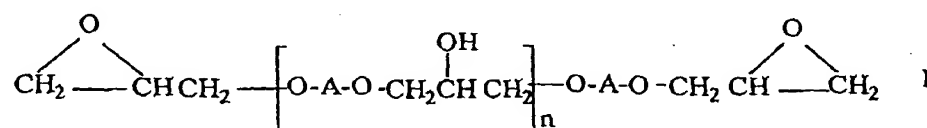


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## Claims:

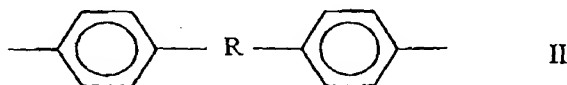
1. An ultraviolet light curable resin composition comprising a water soluble amine salt prepolymer formed between an unsaturated carboxylic acid and an oligomer having at least one amine group selected from the group consisting essentially of urea formaldehyde resins, melamine formaldehyde resins, amine polyisocyanate adducts, Michael adducts of a secondary amine and acrylate and/or methacrylate compounds and epoxy-amine adducts formed between an amine and epoxy of formula:

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wherein n is from 0 to 10 and A comprises a diradical selected from the group consisting of aromatic, substituted aromatic and the diradical of formula II:



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wherein R is an alkylene group of 1 to 4 carbon atoms.

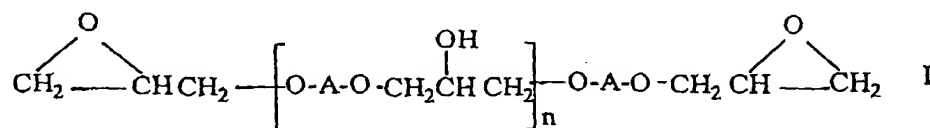
2. A resin composition according to claim 1 comprising an aqueous solution containing a weight ratio of amine salt prepolymer to water in the range of from 1:4 to 20:1.
- 25 3. A resin composition according to claim 2 wherein said weight ratio is in the range of from 3:2 to 9:1.
4. A resin composition according to claim 1 which is curable by UV and contains less than 0.5% by weight based on the weight of the resin component of a UV initiator.
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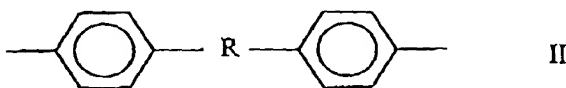
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5. A resin composition according to claim 1 which is curable by UV in the absence of photoinitiator.

6. A resin composition according to claim 1 wherein the oligomer having at least one amine group is an epoxy-amine formed between a secondary amine and an epoxide of formula 1:



wherein n is from 0 to 10 and A is a diradical of formula II:



wherein R is an alkylene group of 1 to 4 carbon atoms.

7. A resin composition according to claim 6 wherein the epoxide of formula 1 is a product of epichlorohydrin and bisphenol A.

8. A resin composition according to claim 6, wherein the amine adduct is formed using a molar ratio of amine to epoxide compound in the range of from 0.5:1 to 2.05:1.

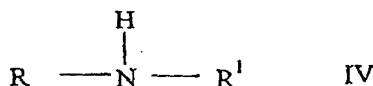
9. A resin composition according to claim 6 wherein the molar ratio of amine to epoxide compound is 0.95:1 to 1.6:1.

10. A resin composition according to claim 1 wherein the oligomer having at least one amine group is prepared from melamine, formaldehyde and/or glyoxal and optionally one or more alcohols selected from the group consisting of C<sub>1</sub> to C<sub>6</sub> alkanols, C<sub>1</sub> to C<sub>6</sub> alkyl ethers of C<sub>1</sub> to C<sub>6</sub> alkylene glycols and C<sub>1</sub> to C<sub>6</sub> alkylene glycols.

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11. A resin composition according to claim 1 wherein the oligomer having at least one amine group is a urethane-amine adduct prepared by reaction of a secondary amine with a polyisocyanate.
- 5 12. A resin composition according to claim 1 wherein the urethane amine adduct is formed from a molar ratio of amine to polyisocyanate of from 0.90:1 to 1.6:1.
- 10 13. A resin composition according to claim 1 wherein the oligomer having at least one amine group is a Michael adduct formed between a secondary amine and an unsaturated compound selected from the group consisting of monomers and prepolymers comprising a plurality of unsaturated groups including at least one acrylate or methacrylate group.
- 15 14. A resin composition according to claim 6 wherein the secondary amine is amine of formula IV:



- 20 wherein R and R<sup>1</sup> are independently selected from straight and branched chain aliphatic of up to 6 carbon atoms optionally substituted by hydroxy and mixtures thereof.
- 25 15. A resin composition according to claim 1 wherein the unsaturated acid is selected from the group consisting of acrylic acid, methacrylic acid, crotonic acid, citraconic acid, sorbic acid, fumaric acid and mixtures of two or more thereof.
- 30 16. A resin according to claim 1 wherein the unsaturated acid is selected from the group consisting of acrylic acid and methacrylic acid.
17. A method of preparing a radiation curable composition comprising forming an amine adduct by reaction of a secondary amine and an epoxy and

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reacting the amine adduct with an unsaturated carboxylic acid to form a water soluble salt.

18. A method according to claim 17 wherein the amine adduct and  
5 unsaturated carboxylic acid are reacted in the presence of water to provide an aqueous solution of a salt formed between the epoxy amine adduct and unsaturated carboxylic acid.

19. A method according to claim 17 wherein the reaction of the secondary  
10 amine and epoxy is exothermic and the reaction mixture is diluted with water during the exotherm.

20. A method according to claim 17 wherein water is  
15 added to provide a concentration of from 20 to 95%.

21. A method of forming a coating on a substrate comprising applying to the  
20 substrate a layer of an aqueous solution of a radiation curable resin according to claim 1 and subjecting the layer of said aqueous solution to ultraviolet radiation to cure the layer.

22. The method according to claim 21 wherein the composition is applied at  
a thickness of up to 200 microns.